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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex Parte KEITH C. HONG, HUSNU M. KALKANOGLU, MING L. SHIAO, ANNE B. HARDY, JAMES A. SALVATORE, and ANDREW G. JOHNSON, JR.

Appeal 2009-010445
Application 10/600,809
Technology Center 1700

Oral Hearing Held: January 21, 2010

Before ADRIENE LEPIANE, HANLON, CHUNG K. PAK, and PETER F. KRATZ, *Administrative Patent Judges.*

APPEARANCES:

ON BEHALF OF THE APPELLANT:

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The above-entitled matter came on for hearing Thursday, January 21, 2010, commencing at 1:02 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Todd Brown, a Notary Public.

THE USHER: Good afternoon. Calendar No. 57, Appeal No. 2009-010445, Mr. Sluzas.

JUDGE HANLON: Are you observing or are you with --

UNIDENTIFIED SPEAKER: He's representing us.

JUDGE HANLON: Okay. I didn't know if you were observing the whole session. Good afternoon, Mr. Sluzas.

MR. SLUZAS: Good afternoon.

COURT REPORTER: Thanks.

MR. SLUZAS: You're welcome.

JUDGE HANLON: Whenever you're ready you may begin. You have 20 minutes.

MR. SLUZAS: Thank you. I think I can begin right now.

JUDGE HANLON: Okay.

MR. SLUZAS: My name is Alex Sluzas. I am representing CertainTeed Corporation in this matter, and I'd like to talk a little bit about the problem faced by the inventors here, and the problem is fairly simple. It's how to discourage algae growth on asphalt-shingled roofs. Conventionally, roofing granules which go into the asphalt roofing shingles have a mineral rock core and they have a color coating on the outside for aesthetic reasons, mainly. And that is simply an oxide, a metal oxide, such as iron oxide, dispersed in a clay silicate binder.

Now, conventional algae-resistant roofing granules have an additional component, and that's typically copper oxide, zinc oxide or zinc sulfide, or some combination, that's also dispersed in the coating on the outside of the roofing granules.

Now, this invention, a fairly simple invention, but I think it's somewhat ingenious. The invention relates to making a porous core out of stone dust and incorporating the algaecide in the core as opposed to putting it on the outside of the roofing granules.

There are three primary references that the Examiner has cited. They all relate to this art. There is no question about it. And they all relate to various ways of putting the algaecide into the coating on the outside of the granules. The secondary references, however, are not in the same art. They're not analogous art --

JUDGE PAK: Counsel, let's look at the three primary references.

MR. SLUZAS: Yes.

JUDGE PAK: It does teach using mineral materials, am I correct?

MR. SLUZAS: That's absolutely correct. They all --

JUDGE PAK: When they say mineral, is that inclusive of stone dust?

MR. SLUZAS: Yes. But stone dust, when the term is used, it really depends on the -- we're really talking about different sized dust here. The granules that are useful, the size of dust that's useful for roofing granules, is within a specific range. And what we're doing is taking smaller particle-sized material and aggregating it into something that's suitably sized for roofing granules.

JUDGE PAK: Counsel, I also noticed that those primary references

involve -- after using it with the binder, they fire the resulting product?

MR. SLUZAS: That's correct.

JUDGE PAK: Is that corresponding to claim insolubilization of the binder?

MR. SLUZAS: Yeah. The point to firing is to cause the -- you heat up the binder hot enough so that the clay and the binder is dehydrated to form a sort of a semi-ceramic material. But you don't want to heat it up so hot so that it forms a glaze on the rock because the glaze would be impermeable, and we want to have a somewhat porous coating so that water can get in and out of the coating to some extent and leach out some of the copper, all right, and that gives the algaecidal effect. But that's part of the prior art. There is no question about that.

JUDGE PAK: Now, according to the Examiner, each of the references obtains base particles by crushing and screening mineral aggregates. You said just a while ago mineral aggregates includes stone dust, stone --

MR. SLUZAS: Yes.

JUDGE PAK: Stone materials?

MR. SLUZAS: Yes.

JUDGE PAK: And when they do the crushing, would that correspond to your claim stone dust?

MR. SLUZAS: Well, the stone dust, when they do -- they crush it and they size it, so they select particles that are within a certain size range, you know, within a certain range of screen sizes. And what happens with the rest I don't know. Typically, I would imagine it's discarded. It's either too

big or too small for this particular application in general. What we do is take material that's smaller, that would otherwise be discarded, and then aggregate it into granules. At the same time we're aggregating it, we put in a binder and we put in algaecide so that the cores of these roofing granules are porous and had algaecide in them.

JUDGE KRATZ: So if I understand it, your core is built up from stone dust?

MR. SLUZAS: That's right. We've got a built-up core.

JUDGE KRATZ: Whereas the core of the prior art is just a granule that was the result of a crushing process --

MR. SLUZAS: That's right, solid stone.

JUDGE KRATZ: And the stone dust as you use it in your claim, as one skilled in the art would understand it, as I believe you're arguing this to be the case, is different than the aggregate that had been used in the prior art --

MR. SLUZAS: Sizewise, yes.

JUDGE KRATZ: Sizewise? It's different -- it's different because it is a different size?

MR. SLUZAS: That's correct.

JUDGE KRATZ: And the only way -- and your preparation of an inner base requires binder to actually form the base?

MR. SLUZAS: That's correct.

JUDGE KRATZ: Whereas the prior art requires binder not to form the base but to form the roofing granule with the other materials like the algaecide?

MR. SLUZAS: To form the coating.

JUDGE KRATZ: Right. So there is a slight difference in that respect. That's what you're --

MR. SLUZAS: Well, we think it's a major difference, but you're absolutely correct, judge. That's true. In our case, the core is built up out of small pieces of stone dust. In the prior art, the core is solid, solid rock, right? So in terms of the rejection that's been applied, the Examiner has made -- relied upon two references -- or actually, all the references in the -- all the secondary references are non-analogous art. They're not the same field of endeavor and they're not reasonably pertinent to the problems being addressed by the inventors here. The inventors here were trying to make algaecidal roofing granules and not trying to dispose of stone dust.

Now, the Examiner takes -- reformulates the problem and says, well, actually, everybody is in the same field here because they're all dealing with stone dust, all right? But that's just like saying that, well, the art of steam locomotives and the art of surgical scalpels is the same art because they're all dealing with the same basic material, steel, so therefore -- and it's not -- it's simply not correct.

And if you look at the specific references in a little bit of detail, you'll see that. One of the references that the Examiner relies on is a little bit troublesome because we have three different versions of it. That's the Japanese patent publication. We have -- she initially relied on the patent abstract -- Japan abstract. And then she also relied upon a machine translation of the Japanese patent. And then after she submitted her Answer, she put an actual human translation of the Japanese reference into the record.

And, you know, I have taken the position that she shouldn't be relying on a machine translation primarily because it's just incomprehensible, you know? It's a very -- maybe there are smarter machines, but the one that happened to translate this patent wasn't very smart, and if you were to base a decision on that reference, I'd say that your decision would have to be arbitrary because you can find anything you want in there if you can read it.

JUDGE KRATZ: Does the translation that was later provided, does that help her case at all or does that hurt her case?

MR. SLUZAS: Well, I think it helps my case, and I'll explain why --

JUDGE KRATZ: Okay.

MR. SLUZAS: From her perspective, she sees the addition of the sodium silicate solution as a binder, all right? If you look -- she has -- if you look at Balcar -- first, let's talk about Balcar briefly. Balcar is a method for disposing of heavy metal dust from aluminum smelting, all right? So the dust is collected from the smelter and then it's mixed with glass, all right, glass dust. And the glass dust is melted, all right, fused, and the result is the -- as a result, the heavy metals are dispersed in the glass dust and they can't be leached out. The whole point is to make it non-toxic, all right? And they're heavy metals. They're not copper oxide or zinc oxides, which of course are first row transition elements and not heavy metals, second or third row transition elements.

So -- but they do disclose -- Balcar does disclose the addition of sodium silicate, which is of course one of the components in our binder, from a different purpose, however. The point is to solubilize the heavy metals, the heavy metal oxides, in the glass. So that's an entirely different

motivation. We're not trying to solubilize anything in our -- you never get it hot enough to do that. We never melt the stone, all right?

JUDGE PAK: But do you ever need Balcar at all?

MR. SLUZAS: Pardon?

JUDGE PAK: Primary references, each discloses sodium silicate solution being --

MR. SLUZAS: Yes. That's true.

JUDGE PAK: -- used together with the granules which has been -- I guess it's small particles that has been crushed resulting from crushing the mineral particles --

MR. SLUZAS: That's true, but --

JUDGE PAK: -- and then mixed in with the -- clay, aluminum silicate, which is another binder of yours, and then they add algaecide, and then they fire them, you know, at a high temperature?

MR. SLUZAS: That's right. But all those components are added to make a coating on the outside of the rock, right? That's not our purpose.

JUDGE PAK: When you combine this binder with the particles, base particles, do you form porous material as well?

MR. SLUZAS: Yes.

JUDGE PAK: So the primary references also form porous particles?

MR. SLUZAS: They form -- no. They form a porous coating on an impervious particle to the extent that the rock itself is pretty much impervious, and it's the coating itself that's porous. You see, the coating is very, very thin, all right? So you can put the algaecide in the coating, but you have to be careful about how much you put in and how you put it in in

order to get the effect you want. You want it to leach out over many years, 20 years, 30 years, all right? And here you are putting it into a very thin coating on the outside.

So the various references try various tricks to control the rate of release. In fact, if you look at the most recent one, the Joedicke reference, he is putting in a combination of two different algaecides, copper sulfate and cupreous oxide, and he's getting a synergistic result, all right? He gets -- the copper oxide comes out faster if he uses -- or excuse me -- yes, copper oxide comes out faster if he uses zinc sulfide as opposed to zinc oxide, and that was what was patentable about his invention.

So you're worried about getting it out of this thin coating, you know, over a long period of time. So how do you do that? So we're taking a different approach to that. We're putting it inside the core so now we have a lot more freedom in terms of formulation.

JUDGE KRATZ: Now, Claim 39 really just says on or within. It doesn't require --

MR. SLUZAS: Yes, on or within. It's a little bit broad.

JUDGE KRATZ: So it could be a coating even in your claim. But I think -- I guess the real issue is -- at least the way the rejection is presented, is that the Examiner seems to have acknowledged that neither -- or all of Joedicke, Skadulis, and McMahon fall short of what you claim in Claim 39 in that they don't prepare the porous inner base particles by using stone dust and a binder?

MR. SLUZAS: Correct.

JUDGE KRATZ: Rather, they just get this aggregate directly from crushing the rock?

MR. SLUZAS: Exactly.

JUDGE KRATZ: And to try to figure out how to get that -- whether it would have been obvious to form that base particle that way or not is the real issue, and the Examiner goes to these secondary and tertiary references to try to --

MR. SLUZAS: That's correct. That's absolutely correct. So Ina takes -- if you read the most recent translation of Ina, what's done is they have stone dust, and they add -- they do add the sodium silicate to the stone dust in order to create agglomerates, but it's being added as a granulating agent. If you look at it, and I think it's Page 5, if you look at it, you see that what they're doing is they're adding it to dry it out. They have -- it's not stated as such in the reference in so many words because the reference is all about the mechanics of it, about a device to do this, all right?

JUDGE KRATZ: This is -- you're talking about the --

MR. SLUZAS: Ina.

JUDGE KRATZ: And he uses -- of course doesn't use -- oh, he uses the silicate --.

MR. SLUZAS: They put it in in order -- as a granulating agent to suck the water out of the slurry so it granulates --

JUDGE KRATZ: Right. And then uses the binder or the calcium as -- or the lime --

MR. SLUZAS: Well, and then it -- yeah. Then it drops through the -- it drops into the screen, and you have these agglomerates -- there not very

well agglomerated because his invention is putting a piece of rubber, a rubber sheet and flopping the rubber sheet up and down to press the loosely agglomerated material through the screen. And then they haul it off and use it as road bed, road sub-bed, to form a large continuous mass of aggregate and not as individual particles. So -- and of course there is no algaecide added. They're just putting -- they're disposing this as -- put it underneath road base, so there is no need for killing algae or any other problem.

JUDGE KRATZ: So does the Examiner ever, anywhere in the Final or the Answer, talk about the three primary references as providing any suggestion to use stone dust and then build up the -- or does he always go to the secondary and tertiary references as --

MR. SLUZAS: For stone dust? No. Formulates the problem as all these references deal with stone dust disposal, all right? And we don't -- I mean --

JUDGE KRATZ: They don't use it to make the particles for the roofing granules, though? They don't use it as the base for the roofing granules.

MR. SLUZAS: They're disposing a stone dust, and I don't know what size it is, all right? It may be a whole range of sizes. They're partially agglomerating it, adding a lime as a temporary binder and hauling it off and using it for road base. So they never form real -- they never cook it, all right? It's never -- they never make individual particles that are permanent out of that material. So the question is, if you were faced with the problem of trying to deal with algae on roofs, would you look at Ina? And my

suggestion is that you would not. It's not the same art, and it's not reasonably pertinent, all right?

Same is true with Balcar. In Balcar, which disposes of the heavy metal dust from aluminum smelting, the idea is to -- the last thing you want is to have the material, the toxic material, active an any way. You want to sew it up completely as possible in glass. And to help do that, you put in the sodium silicate. And again, Balcar suggests you can pre-agglomerate the dust. And again, you're using sodium silicate solution, and what's doing the agglomeration is not the sodium silicate, per se. It's the water. You could agglomerate it with water if you wanted. The only reason they use sodium silicate is because the sodium silicate is later on, when you use -- when you melt the glass that's added to help dissolve the heavy metal oxides in the glass and better disperse them, they make them less leachable and not more leachable.

JUDGE KRATZ: And of course, Balcar has nothing to do with stone dust really, just glass dust --

MR. SLUZAS: Well, it has to do with heavy metal dust.

JUDGE KRATZ: Maybe it could be stone dust, I guess, but --

MR. SLUZAS: Heavy metal dust and whatever else results from smelting aluminum.

JUDGE KRATZ: Yes, smelting aluminum.

MR. SLUZAS: So it's just wholly irrelevant. So there's nothing there -- there aren't any algaecides in the secondary references, all right, none whatsoever. And it's not -- and none of -- neither of the secondary

references is suggesting -- suggests that you can make permanent particles out of the dust, all right, in which you have something that's leachable.

JUDGE KRATZ: Yeah. That's the real issue, and I think it's -- at least the Examiner seems to have understood your claim to require -- and you use that word very often -- aggregate, that you're really -- this porous inner base particle is really an aggregate formed from the stone dust and binder. Although you don't use the word granulating or aggregating the stone dust with the binder, I think that's what's implied by the preparing it from the stone dust and binder. At least that's what you seem to be arguing.

MR. SLUZAS: Right. So basically, the two conventional arguments, number one, it's not reasonably pertinent in the art, so it can't be combined. It's not analogous art. And the second is that even if you do combine it, where do you end up? You don't end up with our invention, because you don't have -- there is no teaching of making permanent aggregates out of the stone dust. I mean, you're certainly not doing that with the glass particles because we're not melting the stone. I mean, we're aggregating it, and it has to still be porous. So it can't -- even if you had a type of material that would fuse -- all right. Let's take quartz. The Examiner equates quartz and glass. And of course they're -- one is a crystalline material, and the other one is not. It's glass, all right? And we, in our Specification, we say you can use quartz as an example of the material you can use, but the point being, of course, that if heated up, it's not going to transform and it's not going to melt. If we intended glass, we'd put glass in there, but we didn't. But the Examiner makes that connection in order to get Balcar in, and that's just not -- it's just not correct.

JUDGE KRATZ: I think I understand your position. I don't know -- Any other questions for anyone else?

JUDGE HANLON: Do you have any?

MR. SLUZAS: Okay. Thank you very much.

JUDGE KRATZ: Thank you.

MR. SLUZAS: Appreciate it.

JUDGE HANLON: Thank you very much.

Whereupon, the proceedings, at 1:24 p.m., were concluded.